

TAB 9

2.3.2 Libby Vermiculite

Vermiculite is a mineral that expands into popcorn-like, low-density pieces when heated. This exfoliated or expanded vermiculite is lightweight and fire-resistant, and thus can be used for insulation, fireproofing, potting soil and other applications. Vermiculite is itself an inert mineral that is not a form of asbestos and has no known toxic properties.

Vermiculite ore from the Libby mine contained numerous secondary minerals, including a form of asbestos known as fibrous asbestiform tremolite.⁶² The Libby facility milled the mined ore into a concentrate through a crushing, screening, washing and flotation separation process that removed most impurities, including tremolite. After milling, the vermiculite concentrate contained 1-3% and generally less than 1% asbestos. At Grace's "expansion plants" throughout the country, the concentrate was passed through furnaces at temperatures approaching 2,000 degrees Fahrenheit, which resulted in the further reduction of asbestos content. The expanded vermiculite – with asbestos content that was typically a fraction of 1% – was bagged and sold under the Zonolite trade name.

After acquiring the Libby mine, Grace implemented a series of changes that dramatically reduced asbestiform tremolite dust levels at the Libby facilities. With these improvements, Grace lowered asbestiform tremolite dust levels from approximately 50 fibers per cubic centimeter of air ("fibers/cc") in 1963, to less than 1 fiber/cc in 1975 and down to 1/15 fiber/cc in 1985, which was many times lower than required under then-applicable government standards. Grace also implemented a medical program to educate employees about the hazards of asbestiform tremolite and to monitor their exposure levels and health.

⁶² Fibrous asbestiform tremolite impurities in vermiculite are atypical and not characteristic of most vermiculite deposits. It is believed that the amount of impurities is related to the extreme depth of the ore deposit in Libby. Most vermiculite deposits – such as those at Grace's Enoree, South Carolina mine – are relatively shallow.

2.5.1.1 Libby and Vermiculite-Related Remediation

2.5.1.1.1 Libby, Montana

In March 2001, the EPA filed a lawsuit in the U.S. District Court for the District of Montana seeking recovery of costs allegedly incurred in response to the release or threatened release of asbestos in the Libby area relating to former vermiculite mining activities. In August 2003, the Montana court issued a ruling in favor of the United States that requires Grace to reimburse the EPA for \$54.5 million (plus interest) in costs expended through December 2001, and for all appropriate future costs to complete the cleanup. Grace has appealed the Montana court's ruling to the Ninth Circuit Court of Appeals.